

REMARKS

Attached hereto is a marked-up version of the changes made to the claims by the current Amendment. The attached is captioned "**Version with markings to show changes made**".

Entry of the above amendments prior to examination is respectfully requested.

Please charge any shortage in fees due in connection with the filing of this paper, or credit any overpayment of fees, to the deposit account of Antonelli, Terry, Stout & Kraus, LLP, Deposit Account No. 01-2135 (566.40671X00).

Respectfully submitted,

ANTONELLI, TERRY, STOUT & KRAUS, LLP



Carl I. Brundidge
Registration No. 29,621

CIB/jdc
(703) 312-6600

VERSION WITH MARKINGS TO SHOW CHANGES MADE

IN THE CLAIMS

Please amend claims 1-5 as follows:

1. (Amended) A biometric authentication system comprising:
a mobile storage device ~~with a computing function having a tamper-~~
~~resistance~~; and
a reader/writer for ~~having a tamper resistance for~~ reading/writing information
from/into said mobile storage device,
wherein said reader/writer ~~includes~~ comprises:
a biological information input device which inputs ~~for inputting~~ biological
information,
preprocessing means for preprocessing the biological information
~~inputted~~ input by said biological information input device, and
a transmitting device for transmitting intermediate information ~~thus~~
preprocessed to said mobile storage device according to a request from said mobile
storage device, and
wherein said mobile storage device comprises ~~includes a template of~~
~~biological information and a secret key to be used for electronic authentication;~~
a template of biological information,
a private key to be used for electronic authentication ,
comparing means for comparing said intermediate information with said
template,

requesting means for requesting another intermediate information from said reader/writer according to said comparing result, and

means for making said private key available when said comparing result satisfies a predetermined criterion.

~~compares said intermediate information with said template; and~~

~~makes said secret key available upon a match after comparing.~~

2. (Amended) A biometric authentication system according to Claim 1, wherein, said biological information is fingerprint information,

wherein said preprocessing means in said reader/writer generates fingerprint image information necessary for a fingerprint identification as said intermediate information, and

wherein said comparing means in said mobile storage device performs the fingerprint identification by processing said fingerprint image information.

~~said reader/writer transmits, sequentially to said mobile storage device, a fingerprint image information necessary for a fingerprint identification, and~~
~~said mobile storage device performs the fingerprint identification by processing said fingerprint image information sequentially.~~

3. (Amended) A biometric authentication system according to Claim 42, wherein, said template includes a plurality of coordinates of a featuring point of a registered fingerprint in said template and small images in the vicinity of said coordinates~~biological information is fingerprint information,~~

wherein said comparing means in said mobile storage device includes:

_____ said registered fingerprint,

_____ calculating means for calculating information for correcting a positional displacement between said registered fingerprint and an input fingerprint that is newly input by using a core position of the fingerprint,

_____ requesting means for requesting said fingerprint image information in the vicinity of said coordinates to said reader/writer according to said coordinates of said featuring point and said information for correcting a positional displacement,

_____ matching means for matching said small images in the vicinity of said coordinates and said fingerprint image information requested, and

_____ judging means for judging said fingerprint being identical to said template according to the plurality of results obtained in said matching means.

~~information for correcting a positional displacement between a registered fingerprint recorded in said template and an input fingerprint that is newly inputted is calculated by using a core position of the fingerprint,~~

~~_____ a small image in the vicinity of a featuring point of said registered fingerprint is retrieved by performing matching in the vicinity of coordinates of an image of said inputted fingerprint, the positional displacement of the coordinates having been corrected, and~~

~~_____ said fingerprint image is determined to be identical to said template according to the number of matched small images.~~

4. (Amended) A biometric authentication system according to Claim 3, wherein, ~~a normal vector of a ridge is retrieved, and~~

~~a position where said normal vector largely changes is determined as a core of the fingerprint.~~ said calculating means for calculating by using said core position of the fingerprint in said mobile storage device retrieves a normal vector of a plurality of ridges sequentially, and determines a position where a direction of said normal vector varies from a predetermined value as a core position of said fingerprint.

5. (Amended) A biometric authentication system according to Claim 4~~2~~, wherein, said comparing means in said mobile storage device includes:~~biological information is fingerprint information,~~

calculating means for calculating information for correcting a positional displacement between a registered fingerprint recorded in said template and an input fingerprint that is newly inputted~~input is calculated by forming images having specific luminance distributions in the peripheries of individual featuring points with regard to the input fingerprint and the registered fingerprint, and by correlating said images therebetween,~~

retrieving means for retrieving a small image in the vicinity of a featuring point of said registered fingerprint~~is retrieved by performing matching in the vicinity of coordinates of an image of said inputted fingerprint, that the positional displacement of the coordinates having been corrected, and~~

judging means for judging said fingerprint image being~~is determined to be identical to said template according to the number of matched said small images.~~